

THE SCYPHOMEDUSÆ OF THE SOUTHERN
HEMISPHERE.

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PART III.--CONCLUSION.

IV. ORDO.—DISCOMEDUSÆ.

Discomedusæ. Haeckel, 1866.

Phanerocarpæ. Eschscholtz, 1829.

Discophoræ. Claus, 1879. (non Eschscholtz, 1829. non Agassiz, 1862.)

Semaeostomeæ et Rhizostomeæ. L. Agassiz, 1862.

Acraspedæ with 8-16 or more marginal bodies (always 4 perradial and 4 interradial, besides these sometimes several accessory); in each marginal body an acoustic vesicle with Entodermal Otolith-pouch, and often at the same time an eye. Marginal flaps, always 8 pairs primary (Ephyra-flaps), and besides often numerous accessory, (Velar-flaps). Tentacles sometimes present, sometimes wanting. Gastral cavity surrounded by a circle of radial processes (8-16-32 or more), sometimes broad radial-pouches, sometimes narrow radial canals. Gonads 4, interradial folded bulges in the Sub-umbrella of the sides of the Gastral cavity, from the Entoderm of which they are developed (they disintegrate seldom into 8 adradial bulges). They are sometimes pouch-shaped, sometimes protruding inwards into the central Gastral cavity, sometimes protruding outwards in hernia-shape into the Umbrella cavity.

Umbrella flattened, orbicular. The ancestral form of all Discomedusæ is the Octomeral Ephyra.

Family. *Ephyridæ*.

With broad radial-pouches, without terminal branch-canals. Discomedusæ with simple, four-cornered Manubrium, without mouth-arms, with simple central mouth. Mostly 16 broad radial-pouches (8 ocular and 8 tentacular) rarely 16-32. With these alternating as many short, solid tentacles. Mostly 16 (rarely 32-64) marginal flaps with or without simple flap-pouches, always without branched flap-canals. 4 interradial or 8 adradial Gonads in the Subumbrella wall of the Gastral cavity.

Genus. *Ephrya*.

Ephyridæ with 8 marginal bodies, and 8 tentacles, with 16 marginal flaps without flap-pouches, and 4 interradial horse-shoe shaped Gonads.

Species. *Ephrya prometeor*.

Hæckel, System der Medusen. Seite, 482.

Umbrella flat bell-shaped, $1\frac{1}{2}$ times as broad as high. Marginal flaps oval, about as long as broad, and $\frac{1}{3}$ as long as the radius of the Umbrella. Tentacles pointed, twice as long as the marginal flaps. 4 simple interradial Gastral filaments. 4 Gonads horse-shoe shaped without flaps and smooth.

Size: Breadth of Umbrella, 8 mm. Height of Umbrella, 6 m.m. Ontogenesis unknown.

Locality: Coast of Australia. Weber.

Species. *Ephrya discometra*.

Hæckel, System der Medusen. Seite, 641.

Umbrella flat, orbicular. Marginal flaps pentagonal, pointed, its tentacular side twice as high as its ocular side. Tentacles cylindrical, club like at the end, the same length as the radius of the Umbrella. In each of the 4 phacellæ there are three Gastral filaments. 4 Gonads horse-shoe shaped, two-flapped.

Genus. *Palephrya*.

Ephyride with 8 marginal bodies and 8 tentacles, 16 marginal flaps and 16 flap-pouches (fork-shaped branches of the 8 ocular radial-pouches) and with 7 interradial horse-shoe shaped Gonads.

Species. *Palephyra antiqua*.

Haeckel, System der Medusen. Seite, 484.

Umbrella nearly semi-spherical, with thick convex central disk, flat spread margin of disk, twice as high as broad. Marginal flaps narrow, oval, pointed, about half as long as the radius of Umbrella. Tentacles as long as the radius of the Umbrella. 4 Gonads horse-shoe shaped with thin median arches and thickened lateral part. On each Gonad 6-8 thin Gastral filaments. Manubrium nearly cubic, hardly half as long as the radius of the Umbrella, without mouth flaps.

Size: Breadth of Umbrella, 20 mm. Height of Umbrella, 8 mm.

Locality: Indian Ocean, to the East of Madagascar.

Genus. *Zonephyra*.

Ephyridæ with eight marginal bodies and 8 tentacles, 16 marginal flaps, and 32 flap-pouches (16 ocular and 16 tentacular) and 4 interradial horse-shoe shaped Gonads.

Species. *Zonephyra connectens*.

Haeckel, System der Medusen. Seite, 641.

Umbrella flat orbicular with deep circular furrow. Manubrium as long as the diameter of the Umbrella, split into 4 oval triangular curved mouth-flaps in the distal third. 16 marginal flaps, nearly pointed, $\frac{1}{4}$ as long as the radius of the Umbrella. 8 tentacles about as long as the radius of the Umbrella. 4 Gonads horse-shoe shaped, two flapped.

Size: Breadth of Umbrella, 10 mm. Height of Umbrella, 3 mm.

Locality: Tropic zone of the Pacific Ocean. Weber.

Genus. *Nauphanta*.

Ephyride with 8 marginal bodies and 8 tentacles. With 16 marginal flaps and 32 flap-pouches. (16 ocular and 16 tentacular), and 8 separate adradial Gonads, which are in regular groups, but not in pairs.

Species: *Nauphanta Challengeri*.

Haeckel, System der Medusen. Seite, 487.

Umbrella cap-shaped, with horizontal flat vertex and vertical side-wall, $1\frac{1}{2}$ times as broad as high. Exumbrella with deep circular furrows and 16 radial grooves. Margin of Umbrella with 16 pedaliæ (8 weak scapular and 8 stronger tentacular.) 16 marginal flaps oval nearly twice as high as broad, with deep clasp furrow, about $\frac{1}{2}$ as long as the radius of the Umbrella. Tentacles cylindrical, pointed, about as long as the radius of the Umbrella. Gonads 8, oval, thick, bulges twice as long as broad, their proximal halves a little broader than their intervals, their distal halves covered by the circular muscle.

Size: Breadth of Umbrella, 12 mm. Height of Umbrella 8 mm.

Locality: South Atlantic Ocean, not far from the Island Tristan de Acuhna. Lat. S. $32^{\circ} 24'$. Long., W. of Greenwich, $13^{\circ} 5'$. In 8,550 feet (1,425 fathom) depth. 16th of March, 1876. Station, 335 of the "Challenger" Expedition. Wyville Thompson.

Genus. *Atolla*.

Ephyride with 16-32 (rudimentary) marginal bodies, and the same number of tentacles, 32-64 marginal flaps, and 64-128 flap-pouches. 8 separate adradial Gonads, which are grouped in pairs. Rhopalia-pouches rudimentary, transformed into narrow glandular canals.

Species. *Atolla Wyvillei*.

Haeckel, System der Medusen. Seite. 488.

Umbrella quite flat, orbicular, about 6 times as broad as high. Radius of disk of the Umbrella nearly twice as high as the margin of the Umbrella, divided from it by a very deep radial furrow. Manubrium contracted in the middle, 3-4 times as broad as high. Gonads grouped in pairs (in their circumference there are 8 elliptic pouches), their perradial intervals are shorter than the interradial. 19-22 (16-32?) rudimentary marginal bodies, and as

many short alternating tentacles (half as long as the radius of the Umbrella.) Tentacle-pedalia broader and shorter than the rhopalar pedalia. The rhopalar flap canals rudimentary, much narrower and shorter than the tentacular canals. Marginal flaps elliptic, truncate with a broad membranous fringe.

Size: Breadth of Umbrella, 58-66 mm. Height of Umbrella, 8-12 mm. Ontogenesis unknown.

Locality: Antarctic Ocean (Indian and Atlantic part). Wyville Thompson.

Family. *Linergidae*.

Discomedusæ with simple quadrangular Manubrium without mouth-arms, and simple quadratic Mouth. 8 marginal bodies, 8 tentacles and 16 marginal flaps, with broad radial-pouches, and branched sack shaped flap canals, without ring canal.

Genus. *Linantha*.

Linergidæ with 4 horse-shoe shaped interradial Gonads (ovaries the proximal arches of which are simple and not divided. On the Subumbrella there are small vesicular diverticals or Subumbral pouches.

Species. *Linantha lunulata*.

Haeckel, System der Medusen. Seite, 497.

Umbrella cap shaped with horizontal upper surface and flat declining side-walls, twice as broad as high. Umbrella flaps oval, pointed, nearly twice as long as broad. Flap canals much bent and branched dendritically. The longest, $\frac{1}{3}$ as long as the flap itself. In every flap 60-70 *cul-de-sac* shaped, terminal branched. Tentacles cylindrical, nearly as long as the radius of the Umbrella, $1\frac{1}{2}$ times as long as the flaps. 4 Gonads simple horse-shoe shaped without interradial septum, with flat, crooked, nearly semi-circular proximal arches.

Size: Breadth of Umbrella, 10 mm. Height of Umbrella, 6 mm. Ontogenesis unknown.

Locality: Tropical Coast of the Pacific, South America, Galapagos Island. Fuchs.

Genus. *Linerges*.

Linergidæ with 4 horse-shoe shaped interradial Gonads, the convex proximal arches of which are divided into 2 adjacent wings by an interradial median septum. On the Subumbrella a double circle of 48 Subumbral-pouches (scrota?). 16 larger proximal (under and between the Gonads), and 32 smaller distal (on the upper margin of the circle of the muscle.)

Species. *Linerges aquila*.

Haeckel. System der Medusen. Seite, 496.

Umbrella cap-shaped with horizontal Exumbrella, and nearly vertical side-walls, $1\frac{1}{2}$ times as broad as high. Marginal flaps oval, a little longer than broad. Flap canals broad, hand-shaped, the longest (medial) half as long as the flap itself, in every flap 20-30 *cul-de-sac* shaped terminal branches. Tentacles cylindrical, at their ends club-like, $1\frac{1}{2}$ times as long as the flaps. 4 Gonads horse-shoe shaped, two-winged, both wings divergent, convex margin flat, on the concave side deeply incised.

Size: Breadth of Umbrella, 18 mm. Height of Umbrella, 12 mm. Ontogenesis unknown.

Locality: Indian Ocean, to the East of Madagascar. Rabbe.

Genus. *Liniscus*.

Linergidæ with 8 separate adradial Gonads (ovariæ) which are curved sickle-shaped or rectangular, and approach with their proximal ends, in pairs, in such a manner that they form a horse-shoe shaped group. On the Subumbrella there is a double circle of 48 Subumbrella pouches (scrota?). 16 larger proximal (underneath and between the Gonads), and 32 smaller distal (at the upper end of the circle of muscles.)

Species. *Liniscus ornithopterus*.

Haeckel, System der Medusen. Seite, 497.

Umbrella cap-shaped, with quite flat vortex and nearly vertical side walls, $1\frac{1}{2}$ times as broad as high. Marginal flaps oval, $1\frac{1}{2}$ times as long as broad, covered with nettle-warts. Flap canals

stretched straight and not bent out. The longest (medial) $\frac{2}{3}$ as long as the flap. In every flap 30-40 *cul-de-sac* shaped terminal branches. Tentacles cylindrical, conic at their ends, nearly twice as long as the flap. 8 Gonads wing-shaped. Both wings of each pair flapped, doubly broken in the inter-radius approaching nearly to touch.

Size: Breadth of Umbrella, 20 mm. Height of Umbrella, 17 mm. Ontogenesis unknown.

Locality: West Coast of the Tropic Africa, Angola, Congo. Brüggemann.

Genus. *Linuche*.

Linergidæ with 8 adradial Gonads of the same shape, which are placed in the same intervals, and are approximated in pairs to 4 interradial groups. There is a threefold circle of Subumbrella-pouches (scrota?), 16 larger proximal, 32 middling and 64 (or more) smaller distal.

Species. *Linuche Lamarckii*.

Haeckel, System der Medusen. Seite, 642.

Umbrella nearly square with horizontal vortex and vertical side-walls, as high as broad. Marginal flaps oval, pointed, nearly twice as long as broad. Flap canal repeatedly dichotomous branched, with straight branches, the longest (medial) $\frac{1}{3}$ as long as the flap; in each flap 20-30 *cul-de-sac* shaped terminal branchlets, Tentacles rod-shaped scarcely as long as the flaps. 8 Gonads globular, distributed at equal intervals.

Size: Breadth of Umbrella, 20 mm. Height of Umbrella, 20 mm.

Locality: Atlantic Ocean, under the Equator. Smith.

Family. *Pelagidae*.

With a simple cross-shaped mouth and 4 folded perradial moutharms, with simple broad radial-pouches, without branched distal canals, without ring-canal. Eight marginal bodies, 16—32 or more marginal flaps.

Genus. *Pelagia*.

Pelagidæ, with 8 adradial tentacles (alternating with the 8 marginal bodies), and with 16 marginal flaps.

Species. *Pelagia panopyra*.

Hæckel, System der Medusen. Seite, 509.

Pelagia panopyra. Péron et Lesueur, 1809. Tableaux des Méduses, etc., p. 349, N. 64.

Pelagia panopyra. Eschscholtz, 1829. System der Acalephen, p. 73. Taf. VI., fig. 2.

Pelagia panopyra. Lesson (p. p. !), 1830. Centurie Zool. p. 192, pl. 62, fig. 2.

Pelagia panopyra. Brandt, 1838. Memoir. Acad. Petersb. Tom. IV., p. 382. Taf. XIV., fig. 1; Taf. XIV., A. fig. 1—5.

Pelagia panopyra. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 164.

Pelagia tuberculosa. Couthouy, 1862; in L. Agassiz. Contrib. IV., p. 164.

(?) *Pelagia Labiche*. Eschscholtz, 1829. System der Acalephen, p. 78.

(?) *Pelagia Labiche*. De Blainville, 1834. Actinologie, p. 302, pl. 40, fig. 3.

(?) *Pelagia Labiche*. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 165.

Medusa panopyra. Péron et Lesueur, 1807. Voyage aux Terres Australes, pl. 31, fig. 2.

Dianaca panopyra. Lamarck, 1817. Hist. nat. An. s. vert. Tom. II., p. 507.

Cyanea Labiche. Quoy et Gaimard, 1824. Voyage de l'Uranie, etc. Zoologie, p. 571, pl. 84, fig. 1.

Umbrella semi-spherical, flattened above, nearly twice as broad as high. Nettle-warts of the Exumbrella small and scattered, elongated. Most dense on the margin of the Umbrella. Marginal flaps nearly quadratic, slightly crenated on the distal margin. Manubrium long and narrow, nearly twice as long as the radius of the Umbrella, 3 times as long as broad. Mouth-arms

long and narrow, $1\frac{1}{2}$ times as long as the manubrium, about 3 times as long as the radius of the Umbrella; its membranous border is twice as broad as the thin cylindrical middle-rib, at its base.

Colour: Variable, generally pale rose or violet. Mouth-arms more violet. Gonads more purple. Nettle-warts violet.

Size: Breadth of Umbrella, 50 mm. Height of Umbrella, 33 mm. Ontogenesis unknown.

Locality: Tropic zone of the Pacific Ocean, from Australia to Peru. Péron, Eschscholtz, Lesson, von Mertens, Couthouy, etc.

Species: *Pelagia papillata*.

Haeckel, System der Medusen. Seite, 509.

Umbrella slightly vaulted. Orbicular 3 times as broad as high. Exumbrella thickly set, with high conic nettle-warts. Marginal flaps twice as broad as high, deeply crenated, nearly double flapped. Manubrium very long and narrow; 8 times as long as broad, twice as long as the radius of the Umbrella. Mouth-arms short and narrow, a little shorter than the manubrium, scarcely as long as the breadth of the Umbrella. Its membrane border narrow, nearly smooth, at the base narrower than the thin middle ribs.

Size: Breadth of Umbrella, 40 mm. Height of Umbrella, 14 mm. Ontogenesis unknown.

Locality: Indian Ocean. Schnehagen.

Species. *Pelagia discoidea*.

Haeckel, System der Medusen. Seite, 510.

Pelagia discoidea. Eschscholtz, 1829. System der Acalephen, p. 76, Taf. VII., fig. 1.

Placois discoidea. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 125, 165.

Umbrella quite flat, orbicular, 4 times as broad as high. Exumbrella smooth, without projecting nettle-warts. Marginal flaps very flat, deeply crenated. Manubrium very short. Mouth-arms very long and narrow, 3 times as long as the radius of the Umbrella. Its membrane border broad, very much folded and curved, at its base several times broader than the very thin cylindrical middle rib.

Colour : Pale reddish hue. Mouth-arms rose-coloured. Gonads whitish.

Size : Breadth of umbrella, 70-80 mm. Height of Umbrella, 15-20 mm. Ontogenesis unknown.

Locality : South Atlantic Ocean, near the Cape of Good Hope. Eschscholtz.

Genus. *Chrysaora*.

Pelagidæ with 24 tentacles (3 between 2 marginal bodies) and with 32 marginal flaps, 16 ocular, and 16 tentacular.

Species. *Chrysaora fulgida*.

Haeckel, System der Medusen. Seite, 514.

Rhizostoma fulgidum. Reynaud, 1830; in Lesson's Centurie Zoologique, p. 79, pl. 25.

Chrysaora Renaudii. Lesson, 1843. Acaléphes, p. 401.

Chrysaora Renaudii. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 166.

Umbrella semi-spherical, twice as broad as high; 32 marginal flaps short and broad, nearly semi-circular, with continuous margin. The 16 ocular and the 16 tentacular ones nearly of the same size, and equally projecting (octantes therefore with simple marginal arches), Radial pouch? Mouth-arms spread out from a narrow base, with only few folds, lancet-shaped, in the middle about half as broad as the radius of the Umbrella, 2-3 times as long as the diameter of the Umbrella. Tentacles about as long as the radius of the Umbrella.

Colour : Umbrella yellowish brown. Star figure and marginal flaps reddish brown. Mouth-arms reddish, Gonads carmine.

Size : Breadth of Umbrella, 300-700 mm. Height of Umbrella 100-200 mm.

Locality : Cape of Good Hope, False Bay. Reynaud.

Species : *Chrysaora Blossvillei*.

Haeckel, System der Medusen. Seite, 514.

Chrysaora Blossvillei, Lesson, 1829. Voyage de la Coquille. Zool., p. 115, pl. XIII., fig. 2.

Chrysaora Blossevillei. Lesson, 1843. *Acaléphes*, p. 401.

Lobocrocis Blossevillei. L. Agassiz, 1862. *Monogr. Acal. Contrib.* IV., p. 166.

(!) *Pelagia volutata*. Couthouy. Manusc. in L. Agassiz, 1862. *Monogr. Acal. Contrib.*, IV., p. 166.

(!) *Zygonema volutata*. L. Agassiz, 1862. *Monogr. Acal. Contrib.*, IV., p. 127-166.

Umbrella slightly vaulted to semi-spherical, twice as broad as high. 32 marginal flaps oval, all of the same size and equally projecting (octantes therefore with simple marginal arch), Radial pouches? Mouth-arms lancet-shaped, strongly curved, shorter than the diameter of the Umbrella. Tentacles filiform, longer than the diameter of the Umbrella.

Colour: Umbrella white, with yellow tinge, and brown design. Rust coloured mouth arms.

Size: Breadth of Umbrella 100 mm. Height of Umbrella, 40 mm.

Locality: Coast of Brazil, Island Santa Catharina. Lesson.

Species. *Chrysaora plocamia*.

Haeckel, *System der Medusen*. Seite, 516.

Cyanea plocamia. Lesson, 1829. *Voyage de la Coquille*. Zool., p. 116, pl. XII., fig. 4.

Cyanea plocamia. Lesson, 1843. *Acaléphes*, p. 385.

Stenoptycha plocamia. S. Agassiz, 1862. *Monogr. Acal. Contrib.*, IV., p. 162.

Umbrella nearly semi-spherical, twice as broad as high. 32 marginal flaps nearly semi-circular. The 16 tentacular and 16 ocular flaps nearly the same size, equally projecting—(marginal arch of the octants therefore circular)—Radial pouches? Mouth-arms very broad and with many folds, in the middle nearly as broad as the radius of the Umbrella. $1\frac{1}{2}$ times as long as the diameter of the Umbrella. Tentacles shorter than the diameter of the Umbrella.

Colour: Umbrella rust-colour, with yellow-brownish design. Mouth-arms without colour, with yellowish frills. Tentacles carmine.

Size: Breadth of Umbrella, 100 mm. (and more). Height of Umbrella, 50 mm.

Locality: Pacific Coast of South America, Peru, Lima, Songallan. Lesson.

Species. *Chrysaora calliparea*.

Haeckel, System der Medusen. Seite, 516.

(?) *Cyanea calliparea*. Reynaud, 1830. In Lesson's Centurie Zoologique, p. 67, pl. XX.

(?) *Stenoptycha calliparea*. L. Agassiz, 1862. Monogr. Acad. Contrib., IV., p. 162.

Chrysaora dinobrachia. Haeckel, 1877. Prodröm. System Med., Nr. 446.

Umbrella slightly vaulted, 3 times as broad as high. 32 marginal flaps, kidney shaped, narrower at the base than at the distal margin. The 16 broader ocular flaps are less projecting than the 16 narrower tentacular ones (therefore the margin in the radius of the eye retracted.) 16 ocular radial-pouches oval, the same breadth in the middle, and half the breadth on the distal margin of the 16 tentacular pouches. Mouth-arms curtain-shaped, very broad and long; 3-4 times as long as the radius of the Umbrella, and curved. Tentacles flattened at the base, and longer than the diameter of the Umbrella.

Colour: Exumbrella intensely reddish yellow, rays of the star-figure (with 32 radial stripes) and marginal flaps chestnut brown. Mouth-arms yellow speckled brown. Gonads yellow.

Size: Breadth of Umbrella, 160-200 mm. Height of Umbrella, 50-100 mm.

Locality: Indian Ocean. Reynaud, Zanzibar, Schnehagen.

Genus. *Dactylometra*.

Pelagidæ, with 40 tentacles and with 48 marginal flaps.

Species. *Dactylometra lactea*.

Haeckel, System der Medusen. Seite, 517.

Dactylometra lactea. L. Agassiz, 1862. Monogr. Acal. Contributions to the Natural History of the U.S.A., IV., p. 166.

Chrysaora lactea. Eschscholtz, 1829. System der Acalephen, p. 81. Taf., VII., fig. 3.

Umbrella vaulted, semi-spherical. Mouth-arms short and broad, the 8 primary (adradial) and the 16 secondary Tentacles of equal length, 2-3 times as long as the breadth of the Umbrella. The 16 tertiary Tentacles much shorter, not so long as the basal distance between two long Tentacles.

Colour: Milky-white, slightly rose coloured. Mouth-arms colourless. Tentacles pale purple. Marginal bodies yellow.

Size: Breadth of Umbrella, 50-80 mm. Height, 30-60 mm.

Locality: Atlantic Coast of South America, Rio Janeiro. (Eschscholtz.)

Family. CYANEIDÆ.

Discomedusæ, with a simple cross-shaped mouth, surrounded by four adradial, folded mouth-arms. Gastral cavity, with 16 or 32 broad radial pouches, and branched coecal flap-canals, without a ring-canal. 8 or 16 marginal bodies, and 8 or more long hollow tentacles.

Genus. *Procyanea*.

Cyaneidæ, with 8 marginal bodies and 8 adradial alternating tentacles of the Subumbrella. There are 8 pairs of flaps on the margin of the Umbrella.

Species. *Procyanea protosema*.

Haeckel, System der Medusen. Seite, 524.

Umbrella slightly vaulted; orbicular. 2-3 times as broad as high. Manubrium quadrilateral prismatic in the upper-half, in the lower-half split into 4 narrow lancet-shaped mouth-arms. Gonads, 4 narrow simple folded bands in the lower part of the gastral cavity, but not hanging down. 16 flaps of the margin of

the Umbrella pentagonal. 8 tentacles simple, strong, and larger than the diameter of the Umbrella. A good distance from the margin of the Umbrella.

Size: Breadth of Umbrella, 40 mm. Height of Umbrella, 14-18 mm. Ontogenesis unknown.

Locality: Indian Ocean, to the East of Madagascar. Rabbe.

Genus. *Medora*.

Cyaneide, with 8 marginal bodies, and 24 tentacles on the Sub-umbrella: 3 on the lower side of every flap. (Umbrella, with 8 main flaps and 16-32 secondary flaps.)

Species. *Medora reticulata*.

Haeckel, Das System der Medusen. Seite, 525.

Medora reticulata—(et *capensis* ?)—Couthouy, 1862. Manuscript of Wilke's, U.S. Exploring Expedition.

Medora capensis—(*reticulata* ?)—L. Agassiz, 1862. Monogr. Acad. Contrib., IV., p. 118-163.

Umbrella slightly vaulted, orbicular, mouth-arms? Gonads? Margin of Umbrella with 32 flaps, 8 pairs of narrow ocular flaps, and 8 pairs of broad tentacle-flaps. The margin of the 8 tentacle pouches with 2 broad flaps and 3 tentacles, (1 medial tentacle between two flap pouches and with two lateral flaps at its outer-margin.)

Locality: Coast of Terra del Fuego, Orange Harbour, Cape Horn. Couthouy.

Genus. *Stenoptycha*.

Cyaneidæ with 8 marginal bodies and 40 tentacles on the Sub-umbrella, 5 on the under side of each tentacle flap. Umbrella with 8 main flaps and 16-32 secondary flaps.

Species. *Stenoptycha rosea*.

Haeckel, System der Medusen. Seite, 525.

Stenoptycha rosea. L. Agassiz, 1862. Monogr. Acad. Contrib. IV., p. 162.

Cyanea rosea. Quoy et Gaimard, 1827. Voyage de l'Uranie, etc., Zoologie, p. 570, pl. 85, fig. 1, 2.

Umbrella slightly vaulted, semi-spherical 2-3 times as broad as high. Exumbrella set with warts, covered with pointed elevations. Mouth-arms tender, richly folded curtains, about as long as the radius of the Umbrella. The margin of the Umbrella has 16 small incisions of which the 8 ocular incisions are deeper than the 8 tentacular ones. 16 flaps quadrangular, truncate. There are 5 very large tentacles on the ventral side of each main flap, they are to 10 times as long as the diameter of the Umbrella.

Colour: Pink. Margin of Umbrella and tentacles darker.

Size: Breadth of Umbrella, 200 mm. Height of Umbrella, 100 mm. Length of tentacles nearly 2 metres.

Locality: Port Jackson, Sydney. Quoy and Gaimard.

Species. *Stenoptycha Goethana*.

Haeckel, System der Medusen. Seite, 642.

Umbrella slightly vaulted, orbicular. Manubrium quadrangular-prismatic, about as long as the diameter of the Umbrella, split in the distal half into 4 oval curled mouth flaps. Gonads 4 curled, slightly bent bands in the lower Gastral wall. They are not suspended. Sixteen marginal flaps pentagonal and pointed. On the ventral side of each of the eight main flaps five tentacles. The middle one is much larger than the others and as long as the diameter of the Umbrella. The others only a third as long.

Size: Breadth of Umbrella, 40 mm. Height, 20 mm.

Locality: South Atlantic Ocean, Coast of Argentina. Smith.

Genus. *Desmonema*.

Cyaneidæ with 8 marginal bodies and numerous tentacles, which are arranged in 8 adradial bundles on the Subumbrella; all tentacles of each bundle are in a single row. Margin of Umbrella with 8 main flaps, and 16-32 secondary flaps.

Species. *Desmonema Annasethe*.

Haeckel, System der Medusen. Seite, 526.

Umbrella flat, cap shaped, 2-3 times as broad as high, mouth-arms curtain shaped, very tender and richly folded, nearly as long as

the diameter of the Umbrella. Gonads are four richly folded pendant pouches, a little shorter than the radius of the Umbrella. Margin of Umbrella with 16 broad nearly pentagonal flaps. Tentacles uniserial in 8 bundles, in each bundle 5 larger, and on each side 4-6 smaller tentacles. Exumbrella depressed in the middle with 16 pinnate radial ribs.

Size : Breadth of Umbrella, 100 mm. Height of Umbrella, 40-50 mm. Length of mouth-arms, 90 mm.

Locality : South Atlantic Ocean, West Coast of South Africa. Wilhelm Bleek.

Species. *Desmonema Gaudichaudi*.

Haeckel, System der Medusen. Seite, 527.

Desmonema Gaudichaudi. L. Agassiz. Monogr. Acal. Contrib. IX., p. 166. *Chrysaora Gaudichaudi*. Lesson, 1829. Voyage de la Coquille. Zoophyt., p. 114, pl. XIII., fig. 1.

Umbrella semi-spherical, twice as broad as high. Mouth-arms lancet shaped as long as the diameter of the Umbrella, with narrow arm-frills, which are not curtain shaped. Gonads not pendant. Margin of Umbrella with 8 (—12?) broad, rounded triangular, projecting flaps, between the 8 (—12?) pair of narrow hidden scular flaps. Ex-umbrella with 8 (—12?) pinnate radial ribs.

Colour : Bright yellow, canals rust-red, tentacles claret colour.

Size : Breadth of Umbrella, 100 mm. Height of Umbrella, 40-50 mm. Mouth-arms, 100 mm.

Locality : Falkland Islands (Soledad, Maluinen). and further south to Cape Horn. Lesson.

Species : *Desmonema pendula*.

Haeckel, System der Medusen. Seite, 528.

Couthouya pendula. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 118, 163.

Nerinea pendula. Couthouy, 1862. Manuscript of Wilke's "U. S. Exploring Expedition."

Umbrella slightly vaulted, orbicular. Mouth-arm exceptionally long (several times longer than the radius of the Umbrella), with narrow arm-frills, which are not curtain-shaped. Gonads not projecting much. Margin of Umbrella with 8 broad projecting tentacle flaps, between the 8 narrow clearly distinct ocular flaps. The 8 ocular-pouches nearly as long as the 8 tentacle-pouches.

Locality: Coast of Terra del Fuego, Orange Harbour, Cape Horn, Couthouy.

Genus. *Cyanea*.

Cyaneidæ, with 8 marginal bodies and numerous tentacles, which form 8 adradial bundles on the Subumbrella. There are several rows of tentacles, one behind the other in each bundle. Margin of Umbrella, with 8 main flaps and 16-32 secondary flaps.

Species. *Cyanea Annaskala*.

Von Lendenfeld, Zeitschrift für wissenschaftlich Zoologie, Band., XXXVII. Seite, 466, Taf. XVII.—XXIV.

The Umbrella flaps are rounded and not broader at the end than at the base. Every main-flap (Ephyra-arm) consists of four flaps. Two smaller ocular flaps and two larger flaps at the sides. The Umbrella is 5-7 times as broad as high, depressed, with a few protruding nettle-warts in the centre of the Exumbrella.

Ontogenesis. The embryos hang on to the Mouth-arms until they are nearly matured to young Scyphystomæ, and then affix themselves to bodies in the water producing a long stalk with a chitinous Perisark, and eight arms. The Ephyra passes into the adult animal by a complicated metamorphosis. The Umbrella flaps are produced by fission.

Colour: Umbrella and Tentacles colourless. Entoderm of the gastral cavity brown. Mouth-arms intensely purple. Genital organs in the male rose coloured, and in the female orange yellow.

Size: 70-150 mm diameter of the Umbrella. Length of Tentacles, 300 mm.

Locality: Port Philip. Von Lendenfeld. Abundant in January, February, and March.

Genus. *Drymonema*.

Cyaneidæ, with eight sense organs, which lie remote from the margin of the Umbrella, in deep excavations. Tentacles scattered over the whole surface of the Subumbrella and arranged radially, branched ridges of the gallert lie between them.

Drymonema Gorgo.

Fritz Müller. Zoologischer Anzeiger. Band., VI., Seite, 220.

The Mouth-arms are longer than in other species, attaining a length 2 or 3 times that of the breadth of the Umbrella. The Umbrella possesses $8 \times 20 \times 16 = 176$ marginal flaps.

Size: 300 to 500 mm., the diameter of the Umbrella. Tentacles, 10 meters or more.

Locality: Rio de Janeiro. Fritz Müller.

Genus. *Melusina*.

Cyanidæ, with 16 marginal bodies and 16 bundles of tentacles, they are attached in several rows. Margin of Umbrella, with 16 main and 64 secondary flaps.

Species. *Melusina formosa*.

Haeckel, System der Medusea. Seite, 535.

Umbrella, flat disc-shaped, 3-4 times as broad as high. Mouth-arms curtain-shaped, richly folded, longer than the diameter of the Umbrella. Gonads richly folded, suspended sacks, nearly as long as the Mouth-arms. Umbrella margin with 64 flaps, which are divided from each other by deep incisions. The 32 ocular flaps half as long as the 32 tentacular flaps. Tentacles numerous and long.

Size: Diameter of Umbrella, 100 mm. Height, 32 mm.

Locality: Pacific coast of South America. Station 299, of the "Challenger." W. Thomson.

Family. *Flosculidæ*.

Discomedusæ, with simple unbranched narrow radial canals and with a ring canal. With central mouth and mouth-arms at the end of a mouth tube.

Genus. *Floscula*.

Flosculidæ, with 8 marginal bodies and with 8 adradial tentacles, alternating with the organs of sense. 16 marginal flaps.

Floscula Promethea.

Haeckel, System der Medusen. Seite, 536. Tafel, XXXII., figs. 1, 4.

Umbrella flat, slightly vaulted, 2-3 times as broad as high. Exumbrella, with an octoradiate pigmented star. Marginal flaps nearly pentagonal, as long as broad. Tentacles about as long as the diameter of the Umbrella. Mouth-tube about as long as the radius of the Umbrella, and of the same length as the lancet-shaped curled mouth-arms.

Size: Breadth of Umbrella, 20 mm. Height, 8 mm.

Locality: Indian Ocean, in the vicinity of the Cocos Islands. Rabbe.

Floscula Pandora.

Haeckel, System der Medusen. Seite, 643.

Umbrella, semi-spherical, twice as broad as high. Exumbrella, with pigment-star. Marginal flaps oval, $1\frac{1}{2}$ times as broad as long. Tentacles as long as the radius of the Umbrella. Manubrium half as long as the Umbrella radius, scarcely a quarter of the length of the narrow lancet-shaped mouth-arms.

Size: Breadth of Umbrella, 30 mm. Height, 15 mm.

Locality: Tropic Zone of the Pacific Ocean. Weber.

Genus. *Floresca*.

Flosculidæ with 8 marginal bodies, 24 tentacles and 32 marginal flaps.

Floresca Parthenia.

Haeckel, System der Medusen. Seite, 538. Tafel, XXXII., figs. 5, 8.

Umbrella flat, barrett-shaped, twice as broad as high. Exumbrella with a pigment star of 16 rays. Marginal flaps oval, pointed, broadest in the middle, twice as broad as long. Tentacles

2-3 times as long as the diameter of the Umbrella. Manubrium $1\frac{1}{2}$ times as long as the Umbrella radius, the same length as the richly folded oval mouth-arms.

Size : Diameter of Umbrella, 30 mm. Height, 3 mm.

Locality : New Caledonia. Levasseur.

Floresca palladia.

Haeckel, System der Medusen. Seite, 539.

Umbrella slightly vaulted, 3-4 times as broad as high. Ex-umbrella with a pigment star of 16 rays. Marginal flaps nearly quadratic. Tentacles as long as the diameter of the Umbrella. Manubrium scarcely as long as the Umbrella. Umbrella radius not quite half as long as the 4 narrow lancet-shaped mouth-arms.

Size : Breadth of Umbrella, 40 mm. Height, 12 mm.

Locality : New Guinea. Koch.

Family. *Ulmaridæ.*

Dicomedusæ with simple central mouth, and four mouth-arms, with branched, narrow, radial canals, and with a ring canal. Tentacles hollow and long.

Genus. *Ulmaris.*

Ulmaridæ with 8 marginal bodies, with 8 adradial tentacles, which alternate with the sense organs, and with sixteen marginal flaps.

Ulmaris prototypus.

Haeckel, System der Medusen. Seite, 445. Tafel, XXXIII. Figur. 1-4.

Umbrella flat, 2-3 times as broad as high. Manubrium square in its proximal part, in its distal part split into four oval mouth-arms, which are much curled and as long as the Umbrella radius. Gonads 4 narrow slightly bent bands, forming nearly a closed ring. Marginal flaps pointed, about as long as broad. Tentacles as long as the diameter of the Umbrella.

Size : Breadth of Umbrella, 30 mm. Height, 12 mm.

Locality : St. Helena. Levasseur.

Genus. *Aurelia*.

Ulmariidae with 8 marginal bodies and with 8 broad adradial, sometimes bipartate velar flaps, each of which bears on its dorsal side, some distance away from the margin, a row of numerous short tentacles. Alternating with as many dorsal flaps. Mouth-arms simple.

Species. *Aurelia colpota*.

Haeckel System der Medusen. Seite, 555.

Aurelia colpota. Brandt, 1838. Memoires de l'Academie Imp. des Sciences, St. Petersburg. Tome IV., p. 370, tab. IX.

Aurelia colpota. L. Agassiz, 1862. Monogr. of Acal. Contrib. to the Nat. H. of the U. S. A. Vol. IV., p. 160.

Monocraspedon colpotus, 1835. Brandt. Prodrum. Descript. Animal. Mertens, p. 25.

Umbrella flat or vaulted, 2-3 times as broad as high. 8 velar flaps of the Umbrella margin not protruding, divided from each other by small and shallow ocular incisions only. Mouth-arms slightly longer than the radius of the Umbrella. Much flapped. Deeply incised and broad at the base. Umbrella radius double the size of the radius of the Genital Organs. At every Genital bay, 5 canal roots. 16 anastomosing canal nets, with very elongate meshes.

Colour: Pale reddish. Gonads and tentacles rose-coloured.

Size: Diameter of Umbrella, 100-120 mm. Height, 40-50 mm.

Locality: Indian Ocean, 35° S., 334° W. Mertens. Coast of Capland. Bleek.

Species. *Aurelia clausa*.

Haeckel, System der Medusen. Seite, 558.

Aurelia clausa. Lesson, 1829. Voyage de la Coquille. Zool., p. 119.

Aurelia clausa. L. Agassiz, 1862. Monogr. of Acal. Contrib. to the Natural pl. of the U. S. A. Vol. IV., p. 160.

Claustra pissinbogue. Lesson, 1843. Acalèphes, p. 78.

Ocyroe lineolata? Péron et Leseur, 1809. Tableaux des Meduses, p. 355.

Cassiopæa lineolata? Lamarek, 1817. *Système des Animaux sans vertèbres*. Tome. II., p. 511.

Umbrella semi-spherical, twice as broad as high. 16 velar flaps of the Umbrella margin protruding. Mouth-arms narrow, thin, and curled; they coalesce at the base; with a large oval, pointed lip-like thickening. The four labial thickenings can close (?) the entrances to the sub-genital pouches.

Colour: Ovaries, canals, and tentacles rose coloured.

Size: Breadth of Umbrella, 80-100 mm. Height, 40-50 mm.

Locality: South Pacific Ocean, Port Proslin, New Ireland. Lesson. Australia (?) Péron.

Aurelia coerulea. nov. sp.

The Umbrella is very flat, about 5 times as broad as high, with 16 small ocular and 16 velar flaps, divided from the former by deep incisions, but from each other only by a shallow groove. The mouth-arms are broad and a little longer than the margin of the Umbrella. They are rounded at the end. The centrifugal branches of the canal system, divide at larger angles than in other species, so that the ramification has by no means a slender appearance. There are very few amostomoses only.

It differs from *Aurelia aurita*, Lamark, by its broader mouth-arms, the margins of which are not curled, and by the stubby appearance of the canal system. In these respects *Aurelia colpota*, Brandt, resembles *A. coerulea*. The colour of our species is similar to that of *A. aurita*, but fainter and always decidedly blue. *A. colpota* also differs from our species in colour. *A. flavidula*, Péron et Leseur, possesses flaps at the base of the mouth-arms, and has a yellow tinge. *A. marginalis*, L. Agassiz, has much smaller mouth-arms. *A. hyalina*, Brandt, again possesses lancet-shaped mouth-arms. *A. labiata* Chamisso et Eysenhardt possesses 16 velar flaps like our species, but these are divided from each other by deep incisions. In *A. clausa*, Lesson, the mouth-arms are narrow and curled, and the colour is red. In *A. limbata*, Brandt, there also are 16 very distinct velar-flaps, and the tentacles are brown.

Similar in appearance, to one or other of these species, it still appears advisable to distinguish *Aurelia coerulea* from these. The main feature of our species are the broad and smooth mouth-arms.

Colour: Transparent and blue. Only the hoof-shaped Gonads reflect the light, and appear white or light rose-coloured as in *Aurelia aurita*.

Size: Diameter of Umbrella, 110 mm. Height, 20-30 mm.

Ontogenesis: I have obtained a single Larva measuring 9 mm, this being similar to corresponding stages in *Europæon Aurelias*, we may suppose that the Ontogenesis of our species is similar to that of *Aurelia aurita*.

Locality: Port Jackson. Von Lendenfeld.

Genus. *Aurosa*.

Ulmaridæ, with 8 marginal bodies, and 8 broad adradial velar-flaps, each of which bears at its upper side, a little distance from the margin of the Umbrella, a row of numerous short tentacles alternating with the same number of much smaller dorsal flaps. Mouth-arms dichotomous.

Species. *Aurosa furcata*

Haeckel, System der Medusen. Seite, 559.

Umbrella flat, orbicular. The 8 velar-flaps of the margin of the Umbrella slightly projecting, divided by small ocular-pouches. Mouth-arms a little longer than the Umbrella radius, very thick. Divided into two lobes by a deep incision in their distal part. Very much curled at the margin. Umbrella radius twice as long as the genital radius. At every genital bay five canal roots connected with each other, and with the four perradial ocular canals by numerous Anastomoses. Canal-net dense with rounded meshes, which are half as large in the outer than in the inner zone.

Size: Diameter of Umbrella, 80 mm. Height, 30 mm.

Locality: Indian Ocean, Cocos Islands. Rabbe.

Family. *Toreumidæ*.

Discomedusæ without tentacles and without central mouth, with four sub-genital cavities, and with ventral suction crisps on the mouth-arms.

Genus. *Archirhiza*.

Toreumidæ, with 8 simple mouth-arms, neither branched nor furcated. Mouth-arms without vesicles and filaments with 16 radial canals and a ring canal, with 8 marginal bodies.

Archirhiza aurosa.

Haeckel, System der Medusen. Seite, 645.

Umbrella flat, disc shaped, margin with 80 flaps, in every Octant 8 oval, pointed velar flaps between 2 broad triangular ocular flaps. Mouth-arms $1\frac{1}{2}$ times as long as the Umbrella-radius, conic, simple, with simple suction crisp.

Size: Breadth of Umbrella, 50 mm. Height, 20 mm.

Locality: New Zealand. Weber.

Species. *Archirhiza primordialis*.

Haeckel, System der Medusen. Seite, 565. Tafel, XXXVI. Figur. 1, 2.

Umbrella slightly vaulted, hat-shaped or semi-spherical. 2-3 times as broad as high. Umbrella margin with 48 marginal flaps. In every Octant four large pointed velar flaps and two small ocular flaps. Mouth-arms about as long as the Umbrella-radius, cylindrical, simple and undivided; on the axial margin with simple zig-zag shaped suction crisp.

Size: Diameter of Umbrella, 40 mm. Height, 20 mm.

Locality: Bass's Straits. Smith.

Genus. *Toreuma*.

Toreumidæ with 8 feathered or trichotome branched mouth-arms. The upper arm is continued in the adradial main branch of the underarm. Numerous club-shaped vesicles between the arm-crisps. 16 radial canals, 8 marginal bodies.

Toreuma theophila.

Haeckel, System der Medusen. Seite, 566.

Cassiopaea dieuphila. Péron et Leseur, 1809. Tableau des Meduses, p. 356.

Cassiopaea theophila. Lamarck, 1817. Hist. Nat. Animaux sans Vertébrés. Tome, II., p. 511.

Rhizostoma theophila. Eschscholtz, 1829. System der Acalphen. Seite, 53.

Polydome theophila. L. Agassiz, 1862. Monogr. of the Acal. Contrib. to the Nat Hist. of the U. S. A. Vol. IV., p. 159.

Umbrella semi-spherical 2-3 times as broad as high. Margin with 96 short coalescing flaps, in each Octant 10 velar flaps between two very small ocular flaps. Ex-umbrella roughly granulated, studded with warts with small oval white spots on the marginal flaps. 8 arms about as long as the Umbrella-radius. With 3 or 4 pair of broad and flat main branches. Between the clusters of crisps numerous, small, and 10 or 20 large club-shaped vesicles. The latter 2 or 3 times as long as the breadth of the main branches.

Colour: Umbrella brownish-red, with white spots on the margin flaps. Gonads and vesicles white.

Size: Diameter of Umbrella, 60-80 mm. Height, 20-30 mm.

Locality: N.W. Coast of Australia, de Witt's Land. Péron.

Species. *Toreuma thamnostoma.*

Haeckel, System der Medusen. Seite. 567.

Umbrella flat, hat-shaped. 3-4 times as broad as high, with 120-160 marginal flaps which are short, truncate, and scarcely protrude. In every Octant 14-18 velar flaps between two very small ocular flaps. Ex-umbrella finely granulated with umerous white spots on a dark ground. Mouth-arms double as long as the Umbrella radius, branched in corymbose manner, with 6-8 pair of cylindrical main branches. Numerous small vesicles not larger than the marginal flaps.

Colour: Umbrella, dark brown, with numerous white spots, dorsal side of arms white, ventral side brown. Vesicles white.

Size: Breadth of Umbrella, 90 mm. Height, 30 mm.

Locality: Indian Ocean. Schnehagen.

Species. *Toreuma Gegenbauri*.

Haeckel, System der Medusen. Seite, 645.

Umbrella flat. In every Octant 8 rectangular velar, between two rudimentary ocular flaps. Ex-umbrella papillous, with an oval white spot on every flap. Arms $1\frac{1}{2}$ times as long as the Umbrella-radius with 4-6 pair of flattened main branches. Between the crisps numerous small vesicles, one very large at the base of each arm, half as long as the arm.

Size: Diameter of Umbrella, 60 mm. Height, 20 mm.

Locality: Tropic part of Indian Ocean. Rabbe.

Genus. *Cassiopea*.

Toreumidæ, with 8 pinnate or trichotome branched mouth-arms. The upper arm extends as main branch to the end of the lower arm. Numerous club-shaped vesicles. 32 radial canals, 16 marginal bodies.

Species. *Cassiopea Andromeda*.

Haeckel, System der Medusen. Seite, 569.

Cassiopea Andromeda. Eschscholtz, 1829. System der Acalephen. Seite. 43.

Cassiopea Andromeda. Tilesius, 1829. Nova Acta. phys. med., N. C. Band., XV. Seite, 266. Tafel., LXIX., LXX.

Cassiopea Andromeda. Milne Edwards, 1849. Cuvier, Regne. Animal Zoophytes, pl. LI., fig. 1.

Cassiopea Forskalea. Péron et Leseur, 1809. Tableau des Meduses, p. 356.

Medusa Andromeda. Forskal, 1775. Descript. Icones. Anim. itin. orient., p. 107, Tab. XXXI.

Medusa Andromeda. Modeer, 1791. Nova. acto. Phys. med. VIII. Appendix p. 30, Nr. 24.

Umbrella flat. In each of the 16 paramers 3 velar flaps between two ocular flaps.

Exumbrella, with 96 white radial spots. 16 large ocular and 16×5 smaller marginal spots. Arms broad and compressed, flat, scarcely as long as the Umbrella radius, with 2-3 pair of flat and short, curled main branches. Numerous small and 8-10 large vesicles on each arm.

Colour: Very variable. Exumbrella reddish—or violet—brown, with white spots between the black radial stripes; margin mostly blueish or violet, arms olive green or red brown, with white spots.

Size: Diameter of Umbrella, 100-120 mm. Height, 20-30 mm.

Locality: Red Sea. Tur., Forskal, Ehrenberg, Haeckel. India, Smith. Sundasea, Sumatra, Tilesius.

Species. *Cassiopea ornata*.

Haeckel, System der Medusen. Seite, 570, Tafel, XXXVII.

Umbrella flat. In each paramere 3 velar flaps between two rudimentary ocular flaps.

Exumbrella, with 96 radial white spots. 16 tongue-shaped ocular specs and 16×5 smaller marginal spots. Arms slender, cylindrical, a little longer than the Umbrella. Radius, with 3-4 slender, densely pinnate main branches. Numerous small vesicles.

Size: Diameter of Umbrella, 100-120 mm. Height, 30-40 mm.

Locality: New Guinea, Koch. Pelew Islands, Weber. Australia, Godeffroy.

Species. *Cassiopea depressa*.

Haeckel, System der Medusen. Seite, 572.

Umbrella flat. Margin in each paramer, with 7 velar and two ocular flaps. Exumbrella without radial spots. Arms very flat shorter than the radius of the Umbrella, with 3-4 pair of short, broad and curled main branches. Very small white vesicles.

Size: Breadth of Umbrella, 100-120 mm. Height, 15-20 mm

Locality: Madagascar, Levasseur. Querimba Islands, Mossambique, Peters,

Genus. *Cephea*.

Toreumidæ, with eight bifurcated mouth-arms, the branches of which are simple and not dichotomous. The upper arm does not extend beyond the bifurcation. Between the suction crisps numerous filaments. 8 broad ocular canals, between which there are numerous narrow radial canals. Without ring canal. 8 marginal bodies.

Species. *Cephea fusca*.

Haeckel, System der Medusen. Seite, 575.

Cephea fusca. Péron et Leseur, 1809. Tableau des Meduses, p. 361.

Cephea fusca. Eschscholtz, 1829. System der Acalephen. Seite, 57.

Cassiopea fusca. Dussumier, 1835. Musée. du Jardin des plantes. Nr. 111.

Polyrhiza fusca. L. Agassiz, 1862. Monogr. of Acalephæ. Contrib. to the Nat. Hist. of the U.S.A., Vol. IV., p. 156.

Umbrella cap-shaped. Central dome flat, vaulted. Covered with 16 or 20 large conic excrecences. Divided from the thin margin of the Umbrella by a deep circular furrow. In every Octant 8 flaps which appear as secondary flaps of one large primary one which lies between the two ocular flaps. The two flat branches of the under arm three times as long as the simple upper arm. They do not reach to the margin of the Umbrella. Filaments numerous decreasing in size centrifugally. The longest as long as the Umbrella radius.

Colour: Umbrella, dark brown. Exumbrella with 8 white radial stripes. Arms yellowish, filaments white.

Size: Breadth of Umbrella, 150 mm. ; height, 30 mm.

Locality: N.W. coast of Australia, de Witt's land. Péron et Leseur. Malabar. Dussumier.

Species. *Cephea conifera*.

Haeckel, System der Medusen. Seite, 576. Tafel, XXXVI., figs. 3-6.

Umbrella similar to a mitre. Central dome with a very thick wall, flat bell-shaped, thickly set with 20 or 30 large and many small granulated conic protuberances. Deep circular groove. In every Octant 8 large rectangular coalescing velarflaps between two small deeply-set ocular flaps. The two compressed forks of the arm double as long as the upper arm. Their distal ends projecting beyond the margin of the Umbrella. Filaments long and numerous. Four particularly stout ones on the Pillar-forks.

Size: 100-120 mm. diameter of Umbrella; height, 30-40 mm.

Locality: Carolina Islands, Samoa Islands. Godeffroy.

Genus. *Polyrhiza*.

Toreumidæ with 8 bifurcate mouth arms, the branches are doubly bifurcate or dichotomous. The upper arm extends beyond the first bifurcation. Long brachial filaments between the crisps, 8 large ocular canals, and between them numerous smaller radial canals. Without evident ring canal. 8 marginal bodies.

Species. *Polyrhiza homopneusis*.

Haeckel, System der Medusen. Seite, 577.

Homopneusis frondosa. Lesson, 1829. Voyage de la Coquille, Mollusques, plate. XII.

Homopneusis frondosa. L. Agassiz, 1862. Monogr. of Acal. Contrib. to the Nat. H. of the U.S.A. Vol. IV., p. 159.

Umbrella flat cap-shaped. The central Umbrella disc flat. Depressed in the centre. With 16 simple radial furrows. Deep circular groove. Margin centrifugal of this groove as broad as the central part. In every Octant 8 short, pointed velar flaps between two small ocular flaps. Arms much dichotomously branched, each with 6 or 8 thicker branches. Filaments short and numerous. Arm branches projecting far beyond the margin of the Umbrella.

Size: Diameter of Umbrella, 60-80 mm. Height, 15-20 mm. (?)

Locality: New Guinea. Waigan Islands. Lesson.

Species. *Polyrhiza orithyia*.

Haeckel, System der Medusen. Seite, 578.

Orinhyia incolor. Quoy et Gaimard, 1833. Voyage de l'Astrolabe. Zoophytes. Tom IV., p. 297, pl. XXV., figs. 6-10.

Salamis toreamata. Lesson, 1843. Acalèphes, p. 343.

Salamis toreamata. L. Agassiz, 1862. Monogr. of Acal. Contrib. to the Nat. H. of the U.S.A. Vol. IV., p. 159.

Umbrella deep cap-shaped. The central Umbrella-disc flat and thick. Depressed in the centre with ramified radial furrows. With deep circular groove. In every Octant 8 short and truncate velar, and 2 small ocular flaps. Arms much dichotomously branched; with 8-10 larger branches. Filaments numerous and short. Longer towards the centre. Arm branches projecting beyond the Umbrella.

Locality: Molucca Sea. Quoy et Gaimard.

Family. *Pilemidæ*.

With no mouth, and many suction openings along the arms, without tentacles. With 4 sub-genital cavities, and with dorsal and ventral suction crimps on the arms.

Genus. *Toxoclytus*.

Pilemidæ without scapulets with 8 free triangular pyramidal arms, the three broad pinnate wings of which bear simple suction crimps on their free margins, with long filaments.

Species. *Toxoclytus roseus*.

Haeckel, System der Medusen. Seite, 586.

Toxoclytus roseus. L. Agassiz, 1862. Monogr. of Acal. Contrib. to the Nat. H. of the U.S.A.

Rhizostoma resea. Reynaud, 1830. Lesson. Centurie Zoologique, p. 97, pl. XXXIV.

Umbrella flat hat-shaped; in every Octant 5 or 6 velar-flaps between 2 ocular flaps (?). Arms scarcely as long as the radius of the Umbrella. The upper arm cylindrical, and about as long as the triangular prismatic lower arm. Suction crimps broad and deeply incised.

Colour: Pale rose-coloured Gonads; marginal flaps and suction crisps, deep rose-coloured.

Size: Not mentioned.

Locality: Tropic zone of the Atlantic. Reynaud.

Genus. *Lychnorhiza*.

Pilemidæ without scapulets, with 8 free triangular pyramidal arms. The wings bear on their free margin numerous thick suction crisps and filaments.

Species. *Lychnorhiza lucerna*.

Haeckel, System der Medusen. Seite, 587. Tafel, XXXIV.

Umbrella flat. Every Octant with 4 large pointed oval velar, and 2 small triangular ocular flaps. Arms nearly as long as the diameter of the Umbrella. Upper arm $\frac{2}{3}$ as long as the lower arm. Laterally compressed and extending below to a broad triangular shoulder-flap. Lower arm triangular pyramidal, with 2 very broad and much flapped dorsal wings, and one smaller ventral wing. Suction crisps much flapped with numerous long, ribbon-shaped filaments.

Size: Diameter of Umbrella, 120-150 mm. Height, 50-60 mm.

Locality: Rio de Janeiro. Von Martens.

Genus. *Eupilema*.

Pilemidæ with 8 pair of scapulets, and with free triangular pyramidal lower arms. The three wings of these bear suction crisps on their free margins, but no other appendages. Without terminal bulbs.

Species. *Eupilema scapulare*.

Haeckel, System der Medusen. Seite, 590.

Umbrella flat hat-shaped, with vaulted dome. In every Octant 8 pair rectangular, narrow and long truncate velar flaps. The 16 intra-circular canal nets touch the distal basis of the mouth-pillars. Stem of disc cubic, narrow, not broader than the pillars. Arms

about as long as the radius of the Umbrella. Scapulets of the same size and shape as the free part of the upper arm; a little shorter than the broad lower arms.

Size: Diameter of Umbrella, 150 mm. Height, 50 mm.

Locality: Sunda Archipel. Sumatra. Weber.

Species. *Eupilema claustra*.

Haeckel, System der Medusen. Seite, 591.

(?) *Claustra Mertensii*. Lesson, 1843. Acalèphes, p. 379.

(?) *Cyanea* (!) *Rhizostoma*. Brandt, Mem. Acad. St. Petersburg. Tom. IV., p. 388, 407, tab. XXXI.

Umbrella flat hat-shaped. In every Octant 6 broad triangular velar, and two small lancet shaped ocular flaps. The intra-circular canal net arcades are distant from the mouth-pillars as much as their own breadth.

Stem of disc, cubic, double as thick as the mouth pillars, arms $1\frac{1}{2}$ times as long as the radius of the Umbrella. Scapulets half as long as the free part of the upper arm, which is a little longer than the broad lower arm.

Size: Diameter of Umbrella, 200 mm. Height, 70 mm.

Locality: Marquesas Islands. Smith.

Genus. *Pilema*.

Pilemidæ with 8 pair of scapulets, with free, triangular, pyramidal, lower arms. The three wings of these bear on their free margin suction crisps, but no other appendages. At the terminal end of each arm a club-shaped or triangular bulb without suction crisps.

Species. *Pilema capense*.

Haeckel, System der Medusen. Seite, 645.

Cephea capensis. Quoy et Gaimard, 1824. Voyage de l'Uranie, p. 568, pl. LXXXIV., fig 9.

Rhizostoma capensis. Lesson, 1843. Acalèphes, 417.

Umbrella semi-spherical. In every Octant six broad semi-circular velar flaps between two pointed triangular ocular flaps. (?)

Upper arm about as long as the lower arm. Terminal bulb adnate, triangular, pyramidal with toothed edges, half as long as the upper arm.

Size: 200-300 mm., the diameter of the Umbrella, and 80-100 mm. in height. (?)

Locality: Table Bay, Cape Town. Quoy et Gaimard.

Genus. *Rhopilema*.

Pilemidæ with 8 pair of scapulets and with 8 free triangular, pyramidal lower arms. The three wings bear on their free margin between the suction crisps numerous club-shaped appendages of similar shape as the terminal bulbs.

Species. *Rhopilema rhopalophora*.

Haeckel, System der Medusen. Seite, 596.

Umbrella, hat-shaped, in every Octant 16 narrow rectangular velar flaps between two short lancet-shaped ocular flaps. Scapulets as long as the free part of the upper arms, half as long as the lower arm. On the free margin of the three wings there are between the flapped suction crisps numerous triangular pyramidal gallert bulbs of the same shape as the larger terminal bulb of the arms.

Size: Diameter of Umbrella, 100 mm. Height, 50 mm.

Locality: To the East of Madagascar. Rabbe.

Genus. *Brachiolophus*.

Pilemidæ with 8 pair of scapulets and with dichotomous branched lower arms, which coalesce at their base with their lateral margins, but otherwise remain free. The coecal thick-walled Manubrium does not reach as far down as the first bifurcation of the arms.

Species. *Brachiolophus collaris*.

Haeckel, System der Medusen. Seite, 597.

Umbrella semi-spherical, twice as broad as high. In every Octant 8 quadratic velar flaps between two oval ocular flaps.

Armbush truncate, conic, extending laterally downward. Projecting a good deal beyond the margin of the Umbrella. Scapulets with their upper margin in the level of the margin of the Umbrella.

Size : Diameter of Umbrella, 80 mm. Height, 40 mm.

Locality : Galopagas Islands. Fuchs.

Genus. *Stomolophus*.

Pilemidæ, with 8 pair of scapulets and dichotomous branched lower arms ; which coalesce in the greater part of the length of their sides. Only the terminal branches remain free. The coecal thick walled Manubrium extends beyond the first bifurcation of the arms.

Species. *Stomolophus fritillaria*.

Haeckel, System der Medusen. Seite, 598. Tafel, XXXV.

Umbrella highly vaulted ; higher than semi-spherical. In every Octant 24 stump rectangular velar flaps between two oval, pointed protruding ocular flaps. Armbush stubbed conic extended downward protruding beyond the margin of the latter, scarcely $\frac{1}{4}$ of the height of the Umbrella. Scapulets hidden in the depth of the Umbrella.

Size : Breadth of Umbrella, 80 mm. Height, 60 mm.

Locality : Atlantic Coast of South America. Surinam.

Family. *Chaunostomide*.

With a single sub-genital cavity, and a mouth in the lower side of the brachial disc, with eight arms, the ventral side of which contains a deep groove. Arms branched dichotomously. Secondary and tertiary branches arranged somewhat pinnate, without marginal tentacles.

Genus. *Pseudorhiza*.

With one large filament at the bifurcation of the arm.

The canal system consist of 16 radial canals, and a ring canal. Centrifugally from the ring-canal we find an anastomosing network of canals, whilst centripetally there are between two adjacent main radial canals, 10 canals running from the ring-canal in a radial direction centripetally.

Species. *Pseudorhiza aurosa*.

PLATE III.

Von Lendenfeld. Zoologischer Anzeiger, Nr. 116. Band V., Seite, 380.

Umbrella 3 or 4 times as broad as high, with a reticulate figure on the dorsal side. In every octant between the two long and narrow ocular flaps there are 6 velar flaps, each of which consists of three secondary flaps. Arms about as long as the diameter of the Umbrella.

Colour: Umbrella colourless, with a violet reticulate figure covering the Exumbrella. Entoderm of Gastral cavity, brown. Upper part of mouth, arm-grooves, rose-coloured. Arm colourless and transparent. Frills along the margin of the grooves, and distal end of long filament richly violet.

Size: Diameter of Umbrella, 400 mm. Thickness of gallert of Umbrella, 30 mm. Brachial disc, 220 mm. in diameter, and 25 mm. in thickness.

Ontogenesis: The embryos are carried about in pouches suspended in great number from the radial canals, which run centripetally from the ring canal. They remain there till they are fit to turn into Scyphystomas, then escape and affix themselves with the aboral pole to any free submerged surface. The Scyphystoma does not differ from other Scyphystomas.

Locality: Port Phillip. Von Lendenfeld. Glenelg. Haacke.

Family. *Versuridae*.

Discomedusæ without tentacles and central mouth, with a single central sub-genital porticus, and with ventral suctorial crisks of the 8 mouth arms (without dorsal suctorial crisks).

Genus. *Hoplorhiza*.

Versuridae with 8 simple, free, neither branched nor fork-shaped, mouth-arms, which do not coalesce with their lateral walls.

Species. *Hoplorhiza simplex*.

Haeckel, System der Medusen. Seite, 609.

Umbrella flat orbicular with 48 marginal flaps (in each Octant 4 large square velar-flaps between 2 tongue-shaped projecting ocular-flaps), 8 arms quite simple, cylindrical, as long as the radius of the Umbrella. Sub-genital ostia about as broad as the distance between them.

Size : Breadth of Umbrella, 50 mm. Height of Umbrella, 20 mm. Ontogenesis unknown.

Locality : South Australia. Bass' Straits. Museum, Godeffroy.

Species. *Hoplorhiza punctata*.

Haeckel, System der Medusen. Seite, 604.

Umbrella slightly vaulted with 176 marginal flaps (in each Octant 10 pair of narrow round velar flaps, between 2 small recurved ocular flaps), 8 arms quite simple, cylindrical, half as long as the radius of the Umbrella. Sub-genital-ostia 3 times as broad as the pillars.

Colour : Exumbrella dark violet-brown, equally speckled with white spots.

Size : Breadth of Umbrella 40 mm. Height of Umbrella, 20 mm. Ontogenesis unknown.

Locality : Coast of North Australia, Arnheim's Land. T. M. Elsey.

Genus. *Cannorhiza*.

Versuridæ with 8 simple, neither branched nor fork-shaped mouth-arms, which are connected with their side-margins, and form together a octagonal tube with an opening underneath.

Species. *Cannorhiza connexa*.

Haeckel, System der Medusen. Seite, 605.

Umbrella flat, orbicular, with 80 marginal flaps (in each Octant 8 narrow rectangular velar flaps between 2 oval pointed ocular flaps.) Brachial tube formed by the lateral conerescing of 8 cylindrical simple mouth-arms, a little longer than the radius of the Umbrella. Above half as broad as long, below the same

breadth. The 4 wide sub-genital ostia about as broad as the strong and free pillars between them. Brachial disk about as broad as the radius of the Umbrella.

Size: Breadth of Umbrella, 80 mm. Height of Umbrella, 30 mm. Ontogenesis unknown.

Locality: South Pacific Ocean, near New Zealand. Smith.

Genus. *Versura*.

Versuridæ with 8 pinnate or trichotome branched mouth-arms, the upper part of the arm continues to the under adradial main branch of the under arm as far as its distal end. Numerous club-shaped vesicles between the branchial frills. Mouth cross with 4 rays, with perradial forked suctorial crisps, without central frills.

Species. *Versura palmata*.

Haeckel, System der Medusen. Seite, 606.

Umbrella quite flat, scutiform, with continuous margin, 8 slight ocular incisions. and 112 marginal flaps which coalesce (in each Octant 12 narrow, rectangular velar flaps, between 2 rudimentary ocular-flaps which are quite joined). Sub-genital-ostia twice as broad as the pillars between. Arms a little shorter than the radius of the Umbrella, pinnate nearly hand-shaped, flat, spread out, as long as broad.

Size: Breadth of Umbrella, 60 mm. Height of Umbrella, 20 mm. Ontogenesis unknown.

Locality: Sunda Sea, Java, Cherebon, Andréa.

Species. *Versura pinnata*.

Haeckel, System der Medusen, 607.

Umbrella, flat, orbicular, with 8 deep ocular incisions and 144 marginal flaps which coalesce, (in each Octant 16 quadratic velar flaps between two small triangular ocular flaps). Sub-genital-ostia as broad as the pillars between. Arms a little longer than the radius of the Umbrella, pinnate flat, spread out twice as long as broad.

Size: Breadth of Umbrella, 80 mm. Height of Umbrella, 3 mm. Ontogenesis unknown.

Locality: Indian Ocean, near the Cocos Islands. Rabbe.

Species. *Versura vesicata*.

Haeckel, System der Medusen. Seite, 645.

Umbrella flat, scutiform, with 8 deep ocular incisions, 208 coalescing marginal flaps (in each Octant 24 narrow rectangular velar flaps between 2 rudimentary ocular flaps). Sub-genital ostia half as broad as the pillars between them. Arms about as long as the radius of the Umbrella, doubly pinnate, flat, spread out as long as broad.

Locality: Australia (North-west Coast. ?). Weber.

Genus. *Phyllorhiza*.

Versuridæ, with 8 pinnate mouth-arms. The Pinnæ are only rudimentary and appear connected by a membrane, so that the whole arm attains an extended leaf-shaped appearance.

Phyllorhiza punctata. Nov. sp.

Plate IV.

The Umbrella is nearly semi-spherical, and about half as high as broad. The Umbrella margin bears in every Octant two sickle-shaped ocular flaps, four simple and four double flaps, all of which taper centrifugally and are truncate. These flaps consist of thick gallert and are connected by thin membranes. Radial furrows extend centripetally from the fissions towards the centre of the disc. The sub-genital ostia are large and oval, more than twice as broad as the pillars of the brachial disc. The brachial disc is thick and a little more than half as broad as the Umbrella. octagonal, with a canal system of its own, and thickly set on its ventral side with filaments to which the young gastrulæ-embryos adhere. The mouth-arms are $\frac{2}{3}$ as long as the diameter of the Umbrella.

Colour: Brachial disc, and stem and branches of mouth-arms and also the ground substance of the gallert of the Umbrella colourless. In the gallert of the Umbrella, close to the surface,

are groups of "yellow cells," Zooxanthellæ which give the whole a brown colour. Towards the Exumbrel surface there are clouds of strongly refracting minute bodies in the gallert, which give our animal the spotted appearance, from which I have derived the specific name. The suctorial crimps are brown. The long stalked suction naps (Peitschen filamente) are colourless and transparent.

Size: Breadth of Umbrella, 500 mm. Thickness of Exumbrella, 50 mm. Mouth-arms, 300 mm. Filaments, 200 mm. long, and at the base 10 mm. thick.

Ontogenesis: The young embryos adhere to the mother's filaments until they have nearly attained the scyphystoma stage. The ephyra is brown spotted. The young medusa goes through a complicated metamorphosis, passing through stages with 24 and 16 marginal bodies.

Locality: Port Jackson. Von Lendenfeld.

Family. *Crambessidæ*.

Discomedusæ, without central mouth and tentacles, with a single central sub-genital porticus and with dorsal and ventral suctorial crimps and 8 mouth-arms.

Genus. *Cramborhiza*.

Crambessidæ with free strong upper arm, and strong, triangular-pyramidal under-arm, the 3 pinnate wings of which possess numerous long filaments between the corymbiated suctorial crimps.

Species. *Cramborhiza flagellata*.

Haeckel, System der Medusen. Seite, 676.

Umbrella slightly vaulted, hat-shaped, with 48 marginal flaps. In each Octant 4 broad, oval, velar-flaps, between 2 small triangular ocular flaps. Exumbrella finely granulated. Ostia of the sub-genital-porticus 3 times as broad as the 4 perradial pillars between them. Arms about as long as the radius of the Umbrella. Upper arm strong, cylindrical, about as long as the triangular pyramidal under arm, the 3 broad wings have strong flapped suctorial crimps, and numerous long filaments.

Size: Breadth of Umbrella, 80 mm. Height of Umbrella, 30 mm.

Locality: Coast of Brazil, Cotingeriba. Hygon. Pernambuca. Leseur.

Genus. *Crambessa*.

Crambessidæ with free strong upper-arm, and strong triangular-pyramidal under-arm, the 3 broad wings of which possess suctorial crisps without especial appendages, without terminal knots or crispless appendages at the distal-end.

Species. *Crambessa cruciata*.

Hæckel, System der Medusen. Seite, 620.

Rhizostoma cruciata. Lesson, 1829. Voyage de la Coquille, Zoophyt., p. 121, pl. XI., fig. 1.

(?) Rhizostoma cyanolobata. Couthouy, 1862; manuscript.

Rhacopilus cruciatus. L. Agassiz, 1862. Monogr. Acal. Contrib., IV., p. 153.

Rhacopilus cyanolobatus. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 152.

Umbrella semi-spherical, twice as broad as high, with 48 marginal flaps. In each Octant between 2 rudimentary ocular flaps, 4 large equally sided triangular velar flaps. Exumbrella with 32 (?) deep radial furrows. Brachial disc as broad as the radius of the Umbrella. Mouth-arms $1\frac{1}{2}$ times as long as the radius of the Umbrella. The upper arm short and narrow, the under arm nearly 4 times as long, surrounded by thick suctorial crisps, conic, pointed at the distal end.

Colour: According to Lesson, yellowish white; Gonads and ring canal pink. According to Couthouy, blue-white, marginal flaps dark blue, suctorial crisps and arms, carmoisin-red.

Size: Breadth of Umbrella, 120-150 mm. Height of Umbrella, 50-70 mm. Ontogenesis unknown.

Locality: Coast of Brazil, Island Santa Catharina. Lesson Rio de Janeiro. Couthouy.

Species. *Crambessa palmipes*.

Haeckel, System der Medusen. Seite, 620.

Umbrella semi-spherical, twice as broad as high, with 64 marginal flaps. In each Octant 6 square truncate velar-flaps between 2 projecting oval ocular-flaps, which are half as long as the former. Exumbrella finely granulated. Arms a little shorter than the radius of the Umbrella. Under-arm triangular-pyramidal, pointed, surrounded by suctorial crisps, twice as long as the short and cylindrical upper arms, which are connected with a thin membrane.

Size: Breadth of Umbrella, 40 mm. Height of Umbrella, 20 mm. Ontogenesis unknown.

Locality; Coast of North Australia, Koch. Museum, Godeffroy.

Species. *Crambessa mosaica*.

Haeckel, System der Medusen. Seite, 622.

Cephea mosaica. Quoy et Gaimard, 1827. Voyage de l'Uranie, Zoologie, p. 569, pl. 85, fig. 3.

Rhizostoma mosaica. Eschscholtz, 1829. System der Acalephen, p. 53.

Rhizostoma mosaica. Huxley, 1849. Philosoph. Transact., 1849. pp. 422, 432, pl. 38, figs. 26, 27; pl. 39, figs. 28-34.

Catostylus mosaicus. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 152

Catostylus mosaicus. Grenacher und Noll, 1876. Abhandl. Senkenberg, Ges. Bd. X., p. 38.

Catostylus Wilkessii. L. Agassiz, 1862. Monogr. Acal. Contrib. IV., p. 152.

Crambessa mosaica. Von Lendenfeld, 1883. Zeitsch. f. wiss. Zool. Bd., 38.

Umbrella slightly vaulted, nearly semi-spherical, 2-3 times as broad as high, with numerous narrow marginal flaps. (To 200? about 24 velar flaps on each Octant). Sides of the gastrogenital-cross nearly rectangular. The same breadth at the distal, and at the proximal end; mouth-arms a little shorter than the diameter of the Umbrella. Under-arm conic, pointed below

surrounded by thickly set suctorial crisps. 3 times as broad as the thin and short upper arm.

Colour: Blue or brown, with a net of white lines on the Exumbrella; male genital organs grey-green, ovaries deep orange-red.

Size: Breadth of Umbrella, 200-350 mm. Height of Umbrella, 80-120 mm. Ontogenesis unknown.

Locality: East coast of Australia, Port Jackson, Quoy et Gaimard, Huxley; Illawarra Lake, T. Drayton; Port Phillip, Port Jackson, von Lendenfeld.

Genus. *Mastigias*.

Crambessidæ, with free strong upper-arms and with strong three-cornered pyramidal under-arms, the 3 wings of which have suctorial crisps. At the distal end of each arm there is a club-shaped, mostly three-cornered, gallert appendage (or terminal knot), without suctorial crisps.

Genus. *Mastigias papua*.

Hæckel, System der Medusen. Seite, 123.

Mastigias papua. L. Agassiz, 1862. Monogr. Acal. Contrib., IV., p. 152.

Cephea papua. Lesson, 1829. Voyage de la Coquille Zoophyt., p. 122, pl. XI., figs. 2, 3.

Cephea papuensis. Griffiths, 1832. In Cuvier's Anim. Kingd., pl. III., fig. 3.

Cephea ocellata? Huxley—(non Péron!)—1877. Manual Invert. Anim., p. 137, figs. 19, 21.

Rhizostoma papua. Lesson, 1843. Acalèphes, p. 715.

Umbrella semi-spherical, with 8 marginal flaps (in each octant 8 semi-circular velar flaps between 2 narrower ocular flaps.) Arms (without appendix) about half as long as the radius of the Umbrella. Upper arm and under arm nearly the same length. Terminal appendix three-cornered prismatic, a little longer than the diameter of the Umbrella.

Colour : Exumbrella bluish green to brownish green, some times more blue or more green, or more brown, with numerous large white spots. Subumbrella light brown, with 8 blue or bluish green ocular canals. Marginal flaps and Gonads rust-colour, brown, blue-green, with brown spots and suctorial crimps. Terminal appendage blue or green towards the end reddish brown.

Size : Breadth of Umbrella, 60-80 mm. Height of Umbrella, 30-40 mm.

Locality : New Guinea (Waigon and Dorey), Lesson ; Louisiade-Archipelago, Huxley ; Philippines, Wendt ; China Sea. H. Koch.

Species. *Mastigius ocellata*.

Haeckel, System der Medusen. Seite, 623.

Medusa ocellata, Modeer, 1791. Nova. Acta. phys. med. n.l., VIII., Apend., p. 27, nr. 11.

Cephea ocellata, Péron et Lesueur, 1809. Tableau des Meduses, etc., p. 361, nr. 98.

Cephea ocellata, Eschscholtz, 1829. System der Acalephen, p. 56.

Cephea ocellata, L. Agassiz, 1862. Monogr. Acal. Contrib., IV., p. 156.

Hidriticus rufus, L. Agassiz, 1862. Monogr. Acal. Contrib., IV., p. 158.

Umbrella semi-spherical, with 112 marginal flaps (in each Octant 12 truncate, rounded velar flaps between 2 oval projecting ocular flaps.) Arms (without appendage) shorter than the radius of the Umbrella. Upper arms a little longer than the shortened broad under arm. Terminal appendage, club-like, three-cornered, as long as the radius of the Umbrella.

Colour : Exumbrella bright reddish, with numerous white, spots surrounded by brown. Margin of Umbrella and Gonads darker red. Arms reddish with small white papillæ, Terminal appendage transparent at the end with a blue stripe.

Size: Breadth of Umbrella, 50-60 mm. Height of Umbrella, 20-30 mm.

Locality: East part of the Indian Ocean, near the Cocos Islands, Rabbe; Sunda Straits, W. W. Wood.

Species. *Mastigias pantherina*.

Haeckel, System der Medusen. Seite, 624.

Umbrella semi-spherical, with 144 marginal flaps (in each Octant 16 narrow rectangular truncate velar flaps, between 2 small lancet-shaped ocular flaps. Arms (without appendage), nearly twice as long as the radius of the Umbrella. The upper arm scarcely as long as the slender three-cornered pyramidal underarms. Terminal appendage three-cornered prismatic, very thin and long, filiform, 2-3 times as long as the diameter of the Umbrella.

Colour: Exumbrella (in spirits of wine), dark brown, with numerous and large white spots, which are surrounded by a broad black border.

Size: Breadth of Umbrella, 50-60 mm. Height of Umbrella, 20-30 mm.

Locality: Tropic Pacific Ocean, Samoa Islands, Museum. Godeffroy.

Genus. *Eucrambessa*.

Crambessidæ with free strong upper arm, and strong three-cornered pyramidal under arm, the 3 wings of which possess numerous clublike appendages without frills. Appendages of the suctorial crimps, of the same shape as the terminal gallert knots.

Species. *Eucrambessa Mülleri*.

Haeckel, System der Medusen. Seite, 624.

Umbrella slightly vaulted, 3 times as broad as high, with 80 marginal flaps (in each Octant 8 large quadratic velar flaps between 2 small three-cornered ocular flaps.) Arms about as long as the

diameter of the Umbrella, between the suctoral crimps of their wings there are numerous three-cornered gallerter clubs, of the same shape as the larger terminal knot of each arm.

Size : Breadth of Umbrella, 120 mm. Height of Umbrella, 40 mm.

Locality : Indian Ocean, Madagascar. Levasseur.

Genus. *Thysanostoma*.

Crambessidæ with weak, shortened and mostly coalescent upper arm, and strap-shaped, very elongated, three-cornered, prismatic under arm, the three narrow wings possess suctorial crimps in their whole length, without terminal knot.

Species. *Thysanostoma thysanura*.

Haeckel, System der Medusen. Seite, 625.

Umbrella nearly orbicular, 2-3 times as broad as high with 96 marginal flaps (in each Octant 10 truncate rounded velar flaps between two pointed three-cornered ocular flaps.) Exumbrella polygonal, slabbed with irregular and granulated slabs, which are scarcely half as broad as the marginal flaps. Sub-genital ostia 4-6 times as broad as the pillars. Arms 2-3 times as long as the diameter of the Umbrella, very narrow, ribbon shaped, three-winged, the same breadth nearly throughout their whole length to the rounded end.

Size : Breadth of Umbrella, 8 mm. Height of Umbrella, 3 mm.

Locality : Australia, Museum. Godeffroy.

Species. *Thysanostoma melitea*.

Haeckel, System der Medusen. Seite, 626

Melitea brachyura. Lesson, 1830. Centurie Zoologique, p. 227, pl. 80.

Rhizostoma brachyura. Lesson, 1829, Voyage de la Coquille, Zoophyt., Tom. II., p. 120.

Thysanostoma Lessoni. L. Agassiz, 1862. *Mongr. Acal. Contrib. IV.*, p. 153.

Umbrella semi-spherical, twice as broad as high, with 80 (?) marginal flaps (in each Octant 8 rectangular flaps, the sides of which coalesce. The velar flaps are truncate and lie between two elongated ocular flaps.) Exumbrella prettily and regularly slabbed with polygonal (5 or 6 cornered) slabs, which are as broad as the marginal flaps. Arms several times as long as the diameter of the Umbrella, very thin, getting gradually thinner towards the pointed end.

Colour: Umbrella whitish, with rust-coloured margin, Gonads yellowish, arms dark yellowish-red.

Size: Breadth of Umbrella, 300-400 mm. Height of Umbrella, 100-200 mm.

Locality: New Guinea, Harbour of Dorey. Lesson.

Genus. *Leptobrachia*.

Crambessidæ without free upper-arms, with ribbon-shaped, very long and thin under arms, which possess suctorial crisps towards the distal end above the terminal knot. Mouth-cross with 4 rays without special frills.

Species. *Leptobrachia leptopus*.

Haeckel, *System der Medusen*. Seite, 630.

Leptobrachia leptopus. Brandt, 1838. *Bulletin Acad. Petersb.*, Tom. I., Nr. 24, p. 191.

Leptobrachia leptopus. L. Agassiz, 1862. *Monogr. Acal. Contrib.*, IV., p. 154.

Rhizostoma leptopus. Chamisso et Eysenhardt, 1821. *Nova, Acta phys. med. n. e.*, Tom. X., p. 356. Taf., 27.

Rhizostoma leptopus. Eschscholtz, 1829 *System der Acalephen*, p. 52.

Rhizostoma leptocephalus. De Blainville, 1834. *Actinologie*, p. 298.

Umbrella semi-spherical, with 48 marginal flaps. In each Octant 4 rectangular velar flaps between 2 small ocular flaps (?). Subgenital ostia twice as broad as the pillars between; the mouth cross smooth. Arms very long and thin, ribbon-shaped, about twice as long as the diameter of the Umbrella, with a bundle of frills, at the end from which there protrudes a pointed terminal knot.

Colour: Pale violet; marginal flaps, margin of the arms and terminal suctorial crisps, dark violet; Gonads, yellow.

Size: Breadth of Umbrella, 8 mm. Height of Umbrella, 40 mm.

Locality: Tropics of the Pacific Ocean, Radaek Island. Chamisso.

Genus. *Leonura*.

Crambessidæ without free upper arms, with ribbon-shaped, very long and slender under-arms which only have suctorial crisps towards the distal end above the terminal knot, mouth cross with 8 rays and 8 adradial suctorial crisps, which form especial frills round the centre of the brachial disc.

Species. *Leonura leptura*.

Haeckel, *System der Medusen*. Seite, 631.

Umbrella flat, orbicular, with 80 marginal flaps. In each Octant 8 rectangular velar flaps, between 2 pointed triangular ocular flaps. Sub-genital-ostia 3 times as broad as the pillars between them. Mouth cross of the brachial disc with frills; the 8 rays in pairs. Arms very long and slender, ribbon-shaped, nearly three times as long as the diameter of the Umbrella, a bundle of frills, at the end which surrounds a pointed three-cornered terminal knot.

Size: Breadth of Umbrella, 100 mm. Height of Umbrella, 50 mm.

Locality: South Pacific Ocean, near New Zealand. Weber.

Species. *Leonura terminalis*.

Haeckel, System der Medusen. Seite, 696.

Umbrella slightly vaulted with 80 marginal flaps. In each Octant 8 pointed 3-cornered velar flaps between 2 small divergent ocular flaps. Sub-genital-ostia 3 times as broad as the pillars between. Mouth cross of the brachial disc with regular frill with 8 rays. Arms not very long, ribbon-shaped, about as long as the diameter of the Umbrella, with a tassel-shaped bundle of frills, which surround a 3-cornered, projecting terminal knot.

Size: Breadth of Umbrella, 80 mm. Height of Umbrella, 20 mm.

Locality: Pacific Ocean, "Challenger" Expedition. Wyville Thomson.

EXPLANATION OF PLATES.

Plate III.—*Pseudorhiza aurosa*, von Lendenfeld, painted from life, 0·5 natural size.

Plate IV.—*Phyllorhiza punctata*, von Lendenfeld, painted from life, 0·5 natural size.